

Peacocke (J. M.)

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DEAD.

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## The Disposal of the Dead.

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BY JOHN M. PEACOCKE, M.D.  
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In primitive times, before men began to multiply on the face of the earth, it is probable that the dead were laid in woods or anywhere above ground where they were exposed to the action of the elements and became a prey to the beasts of the field and the fowls of the air.

Since that remote period mankind has adopted four principal methods for the disposal of the dead — interment, embalmment, entombment and incineration.

Strange burial customs are to be found in different countries, and form in many instances distinctive characteristics of the people practising them.

The Ethiopians salted the body to keep it from putrefaction, and then enclosed it in a coffin covered with glass, through which the remains might be seen. The Parthians, Medes, Iberians and Caspians had such a horror of the decomposition of the body that they rejected all interment and cast the dead into the open fields to be devoured by wild animals.

The Kamtchatdales keep special dogs for the purpose of devouring the dead. The ancient Ichthyophagi, who dwelt on the shores of the



Persian Gulf, committed the corpse to the silent depths of the sea. A like form of aquatic burial is still prevalent among some American aborigines, who deposit the dead in a canoe and launch it on a stream or lake remote from human habitations. The Parsees, the modern followers of Zoroaster, erect high towers, called the Towers of Silence, on which are exposed the naked bodies of the dead which become the prey of vultures. The Chaldeans, though worshippers of fire, regarded the burning of the dead as an insult to their deity. The Scythians practised aerial sepulture. The dead body was sewn up in skins of animals and suspended from branches of trees. A similar custom is occasionally observed by some of our Indian tribes, who envelope the corpse in a buffalo hide and place it on an elevated platform. The ancient Mexicans burned the dead, and only consigned to the grave the bodies of those who had been drowned or died of dropsy. The Mussulman regards the grave with feelings of the deepest reverence. He requires it to be of certain size and sufficient depth that he may be able to rise in it to his knees and wrestle with the angel at the last day. The Chinese look upon the funeral as a most important undertaking. There is no object of science or art dearer to the heart of a Chinaman than his coffin. A wealthy man will expend several thousand dollars upon this piece of vanity. A man of limited means will give all he has, and a son is frequently known to sell himself for a slave that the remains of his father may rest in a rich coffin.

The earliest mode of burial was interment. The word *burial* is derived from an old Anglo-Saxon word which means concealment. According to Josephus, the first interment was that of Abel. Cain buried the body to cover his crime. The patriarch Abraham strikes the keynote of the reason for burial, when, on the death of Sarah, he said to the children of Heth: "Give me possession of a burying-place that I may bury my dead out of my sight." "There they buried Abraham and Sarah his wife; there they buried Isaac and Rebecca his wife; and there I buried Leah."

Moses was buried in a vale in the land of Moab. No man dug his grave, for "the angels of God upturned the sod and laid the dead man there." The Hebrews buried in caves or sepulchres, or in graves in the open fields. They were very exact in all the minutæ relative to the final disposition of the dead. After death the body was well washed, generally with a strong solution of native carbonate of soda, anointed with highly aromatic unguents, and swathed in numerous folds of linen. According to Pliny, earth burial was customary in the early days of Rome. The law of the famous Twelve Tables expressly forbade the burying or burning of the dead within the city, or within sixty feet of any house, without the consent of its owner. Large tracts

of land in the suburbs of Rome were donated by the patricians and appropriated to purposes of interment. These were the origin of cemeteries (*places of repose*). The primitive Christians in Rome buried in the catacombs. Many of these subterranean passages are of great antiquity and were connected with quarries hewn long before the Rome of Romulus and Remus was founded. They represent whole cities of the dead and contain in all about 6,000,000 bodies. Burial and not cremation seems to have been the one design and purpose of the catacombs. The early Christians regarded cremation as a pagan rite, entirely antagonistic to their belief in the resurrection of the body. The persecution against the Christian church ceased with the conversion of Constantine in 312.

During his reign Christianity became the imperial faith, and by his memorable edicts of toleration the Christians were allowed to possess land without fear of disturbance, and bury their dead publicly and above ground without danger of molestation. In 509, the Senate gave permission to Pope Marcellus to establish the first Christian cemetery in Rome. The honor of being buried within the precincts of the Christian sanctuary was first assigned to the Emperor Constantine, whose remains were deposited in the vestibule of the Church of the Holy Apostles at Constantinople. With his death originated the custom of burial in churches. The desire to find a resting-place in hallowed ground is not confined to Christianity, even those considered pagan had exalted ideas of the sanctity of the ground surrounding their temples. Pachacamac was the sacred City of the Supreme Divinity of Peru and the Mecca of the land of the Incas centuries before the advent of Pizarro. Here was erected a magnificent temple of the Sun. A distance of two hundred paces from it was considered holy, and no one was allowed to pass within this boundary but with naked feet. Its vicinity seems to have been used as one vast cemetery. Exploration therein has revealed countless number of desiccated bodies, lying tier upon tier, showing how great must have been the concourse of people and how eager the wish to be buried within the shadow of the walls of that once mighty structure dedicated to the Creator of the world.

The almost universal sentiment to bury near the remains of the sainted or illustrious dead is only the expression of an instinctive feeling which awoke very early and acted very powerfully in the Christian church. It is in fact an echo, reverberating through the centuries, of the desire of the old prophet of Bethel that his bones should be laid beside the bones of the man of God from Judah. With the propagation of Christianity, the baneful practice of church burial became more and more popular. Several decrees were issued to stop the evil, but



in vain ; the canon bearing on the matter was erased, and the law concerning it became a dead letter. The churches could not accommodate all the dead, consequently the majority of the bodies of the faithful were interred in the surrounding enclosures or churchyards. Medical authorities in the eighteenth century pointed out the danger accruing from intramural interment, and the governing powers of civilized countries were appealed to. In England the whole system of intramural interment was checked by Mr. Chadwick and other sanitary reformers in 1844. Measures were afterwards carried out for closing graveyards in crowded cities and placing interment in cemeteries under sanitary control.

At the present day the custom of burial within cities is on the wane. Cemeteries are to be found in the vicinity of all centres of population both at home and abroad. They are, as a rule, far different from the old churchyards, and are more spacious than formerly. In their location the public health has been considered, and regulations have been adopted as to depth of graves and their distances from dwellings and wells. In thickly settled Europe, where the ground is more or less limited and the population dense, the overcrowded state of churchyards and cemeteries can be readily accounted for ; yet in a new country like this, with an almost boundless domain, the incontrovertible fact confronts us that in many burial places, and not very far away either, one grave is not permitted to be set apart for one body.

The late Rev. Dr. Beugless says : " Of the great cemeteries about New York, there is not one, not even Woodlawn or Greenwood, in the public lots of which three or more bodies are not put in one grave, that of John Doe who died from a "bare bodkin" being sandwiched between those of Richard Roe and James Low who were the victims respectively of small-pox and yellow fever."

Few cities are so generously supplied with cemeteries as Brooklyn. They hedge in the city on all sides, occupy nearly two thousand acres of valuable real estate, and include some of the choicest building sites. These burial places are destined to be, in the near future, within the city limits and encompassed by human habitations. Their founders located them far off, as they thought, in the country, remote from chance of municipal encroachment and distant from the hum and the hurry, the haunts and the homes of the living town. The city of New York is extending so rapidly that, as time rolls on and population increases, it would not be improbable for the great metropolis to include within its boundary the whole of Kings County, part of Queens and part of Westchester Counties. Where will the present cemeteries be then ? Right in the centre of a teeming population, which in time, from stress of space, will be compelled to build their dwellings upon these beds of pestilence.

In 1794, not one hundred years ago, the population of New York City was 35,000, and then the municipal authorities located the Potter's Field at the corner of Greenwich and Albany roads, or not far from what is now the west end of Chambers Street. There had been pauper burials in the north end of the City Hall Park, and the negro burial ground at that time was on the site of the Stewart Building, at the corner of Broadway and Chambers Street. Nearly all the churches in town were south of this, and each had its own graveyard. In 1801, the city selected, on account of its retired location, the place now known as Washington Square as a Potter's Field. It and other far-off fields were rubbish grounds where the city authorities dumped the poor dead.

When the cemeteries of Père la Chaise and Montmartre in Paris were established, they were on hillsides that were at some distance in the country. Now, though they are not in the heart of the city, they are far within the city limits and have a dense population on all sides of them. Père la Chaise is so overcrowded with decaying bodies that ordinary cadavers are dug up after five years in order to make room for their ghastly successors.

The putrid emanations from these Parisian cemeteries have caused fevers of a typhoid type, diseases of the throat and intestinal canal, to which numbers fall victims every year. The French Academy of Medicine reports that these diseases have been traced to the vitiated air and water in the neighborhood of these burial places. In Naples an unique form of interment prevails. Three hundred and sixty-five pits are dug, one for each day in the year. All who die within twenty-four hours are put into one of these.

Referring to this wholesale burial, Dr. Curtis, of Chicago, has facetiously said: "After enjoying for three hundred and sixty-four and a fraction days 'the sweet rest of the grave' that poets sing of, the trump (and in this case spades are trumps) bids the dead arise."

The "Potter's Field" of New York City is located at present on Hart's Island. Since 1869 more than 60,000 bodies have been buried there. There are no single interments, the bodies are placed in trenches, dug in regular rows, 45 feet long, 14 feet wide, and 10 feet deep. Each of these pits will hold 150 bodies, which are laid three deep, in six rows of twenty-five each. In 1887, 4158 bodies were buried on Hart's Island; the interments average about thirty per day. In the public or poor quarter of Calvary Cemetery a trench is dug, 7 feet wide, 10 to 12 feet deep, and of indefinite length, in which the coffins are stowed tier upon tier, making a flight of steps, five or more deep, and with not enough earth to hide one from the next.

A positive danger lurks in this form of burial, as when numerous



bodies have been interred in a space of limited size and within a comparatively short period of time, the earth becomes so saturated with the foul products of decomposition that it is incapable of further absorption. The modes described of burying the pauper dead in pits of putridity is a disgrace to our vaunted Christianity and a blot on our civilization. If land be too dear to give the dead poor a decent burial, respectful to the departed and innocuous to the living, a thousand times better it would be that their bodies should be burned and their ashes buried.

The proposed incineration of Isaac by Abraham on Mount Moriah appears to have been the first authenticated case of burning the dead. Although not consummated, it undoubtedly had the approval and authorization of Jehovah. In Amos, it is said that Moab burned the bones of the King of Edom into lime; and, in Samuel, that when Saul the King of Israel and his sons fell in honorable warfare with the Philistines, "the valiant men of Israel arose and went by night and took the body of Saul and the bodies of his sons from the wall of Bethshan, and came to Jabesh and burned them there, and they took their bones and buried them under a tree at Jabesh."

The Assyrian tombs discovered on the banks of the Euphrates and Tigris furnish unmistakable evidence of cremation. The Jews practised incineration for sanitary reasons in times of plague and pestilence; the bodies were burned in the vale of Tophet. Cremation was adopted in Asia at a very early period. It was known to the Hindoos from a remote date. From India it extended to the Western world, and was followed there by the Thracians, Celts, Sarmatians, and other nations. Though the last funeral fires expired in the fourth century, yet the Indo-Germanic nations burned their dead until late in the mediæval times. The first mention of incineration in Greek literature occurs in the Iliad, and refers to the funeral of Patroclus and Hector. Homer did not regard the process as an innovation, but rather as the common usage. Many of the notable men of Greece were incinerated—Solon, Alcibiades, Pyrrhus, Plutarch, and others. Cremation was not in general favor among the Romans until towards the termination of the Republic. Sylla, in B. C. 78, was the first patrician who desired to have his remains incinerated. Julius Cæsar, Brutus, Octavius, Augustus, Tacitus, and several other celebrities of that age, were cremated. The funeral rites among the Romans varied according to the means of the deceased. In the latter days of the Republic, and under the earlier emperors, the remains of the rich were washed, anointed with oil, and perfumed by the slaves of the undertakers. Balsams were poured over the corpse, it was enveloped in asbestos, placed on the pyre and covered with cypress boughs. The nearest relative unclosed the eyes of



the deceased and, with averted face, applied the torch to the wood. As the flames ascended the favorite animals of the departed were sometimes flung into the fire, as well as costly arms and robes. Various perfumes were added and were rendered necessary by the disgusting odor. The amount of spices, oils, and balsams destroyed at incinerations was enormous. Pliny reports that Nero used up more incense, myrrh, and other aromatics at the cremation of Poppæa than could be produced by the whole of Arabia in one year. When the burning of the body was completed, the embers were soaked with wine. The bones and ashes of the deceased were gathered by the friends, who sprinkled them with perfumes and placed them in an urn. The urns were of rich design and artistically decorated, and were made of marble, alabaster, or baked clay. When sealed they were deposited in niches called *columbaria*, from the resemblance of their arrangement to a dovecot. Nathaniel Hawthorne was so charmed by the exquisite beauty of some of the urns and columbaria as to lead him to remark that he would not object to be decently pigeonholed in a Roman tomb. During the Trojan war incineration appears to have been adopted that the remains of the dead heroes might be restored to their native land. A very good account of burning the dead as customary among the ancient Romans may be found in Bulwer Lytton's novel, "The Last Days of Pompeii." The cremation of the rich was attended with such pomp, ceremony, and expenditure of money, that the poorer classes were compelled to resort to interment as being the much cheaper way for the disposal of the dead. This finally led to the re-introduction of earth burial, which strangely enough was coincident with the decline and fall of the Roman Empire. During the time that cremation was customary in Rome the color of the habiliments of mourning was white; when interment was the practice the hue changed to the sombre black.

As Christianity spread, incineration became gradually obsolete, and the dead were consigned to the slow and loathsome process of putrefaction in the grave or tomb. For centuries cremation lay buried in oblivion; it was not entirely forgotten, as efforts at its revival were made at long intervals. These endeavors were brought to a climax in 1868, when cremation was introduced at the Medical International Congress at Florence as a sanitary measure of great importance. A lively enthusiasm was then kindled and an impetus given, resulting in the growth of the movement, despite the determined opposition shown toward it.

The process of cremation, as conducted at Gotha by means of the Siemen's apparatus, is thus described :

"The body is borne into the chapel and placed in a catafalque which

stands in front of the altar. The section of the chapel-floor upon which the body rests constitutes the floor of a lift, or elevator. As the funeral service proceeds the elevator invisibly and noiselessly descends, bearing the body to the basement directly in front of the incinerator, which by means of superheated air, has been raised to a white heat within, at a temperature of about 1500° Fahrenheit. As the door of the incinerator is opened to receive the body, the intruding cold air cools it to a delicate rose-tint; and the body, resting on a metallic bed, covered with a cloth of asbestos, or of linen soaked in alum, passes over rollers into this bath of rosy light. Immediately it becomes incandescent, in which condition it remains until incineration is complete. This requires about an hour per hundred pounds of the original weight. There remain only a few handfuls of pure pearly ashes, equivalent to about four per cent. of the original. These are dropped by means of a lever into the ash-chamber below, and are drawn thence into an urn of terra cotta, marble, alabaster, or other suitable material, and returned by means of the elevator to the catafalque. The service or ceremony being now over, the friends of the deceased find the ashes just where they had last seen the body of the departed, and may bear them thence to the columbarium or mortuary chapel, or set them in the border and plant violets, heartsease, and forget-me-nots in them from year to year.

‘And from his ashes may be made the violet of his native land.’

“No fuel or flame of foreign substance comes in contact with the body. The process is accompanied with no perceptible sound or smell or smoke—absolutely nothing that can offend the sensibilities of the most fastidious. All the smoke and volatile products of combustion are passed through a regenerating furnace before being turned loose into the air, and are absolutely purified. The process is indeed in every way so decorous and so beautiful, as compared with other methods of disposing of the dead, that it is described by those who have witnessed it as ‘fascinating,’ and scarcely an instance is known of any one having witnessed the process, as thus conducted, who has not at once become a pronounced convert to cremation, whatever may have been his pre-existing prejudice.”

As a hygienic and economic measure, cremation is recognized as a proper sanitary process. It has been indorsed as a sanitary necessity by the Society of Medical Jurisprudence and State Medicine of New York, the American Public Health Association, and the American Medical Association. In England it is now regarded in quite a favorable light, and the *London Times*, which was once so hostile to the movement, has come around and now upholds what some years ago it so vehemently opposed.

Europe has twenty-four crematories, situated at London, Paris, Rome, Brussels, Gotha, Dresden, Florence, Copenhagen, Milan, and other places. About 800 bodies have been incinerated in Germany and about 1200 in Italy.

In the United States there are twenty-two cremation societies and ten crematories; the latter are located at Fresh Pond, L. I., Washington, Pa., Lancaster, Buffalo, Pittsburgh, Cincinnati, Los Angeles, Detroit, St. Louis, and Philadelphia. Crematories are in course of construction in Baltimore, San Francisco, Davenport, San Antonio, and Louisville.

At Fresh Pond, L. I., the first body was incinerated on December 4, 1885. Up to November 25, 1888, 229 cremations have taken place there. The charge for each incineration is \$35. The actual cost to the company for same is \$15.

The three chief impediments that obstruct the advance of cremation are the sentimental, the religious, and the medico-legal.

The late Professor Gross alluded to the sentimental objection in the following words: "If people could see the human body after the process of decomposition sets in, they would not want to be buried, they would be in favor of cremation, and would look upon burning the human body as a beautiful act in comparison with burying it. There is something eminently repulsive to me about the idea of lying a few feet under the ground for a century, or perhaps two centuries, going through the process of decomposition. When I die I want my body to be burned."

This burning and shining light of the profession further said: "People's prejudice is the only opponent that cremation has." Dr. Buck remarks: "The real objection of most people to the practice of cremation is an emotional phenomenon, and therefore the harder to reach by argument. It is altogether probable that if bodies were usually burned and burial were proposed as a substitute, there would be an outcry of horror at the barbarous suggestion." Only because the putrefactive process is hidden that it is tolerated; should it take place openly and within sight, the whole civilized world would rise indignantly and sweep such a vile custom from the face of the earth.

Many distinguished men among the clergy are opposed to cremation on religious grounds. The Bishop of Lincoln, in Westminster Abbey, July 5, 1874, denounced incineration as barbarous and unnatural, and said, "One of its first fruits would be to undermine the faith of mankind in the doctrine of the resurrection of the body." His Lordship has been pertinently asked, "Can it be supposed to be less possible or less easy for the all-knowing and almighty God to gather and revivify the material atoms after they have been oxidized



and scattered by the agency of the incinerator than after precisely the same result has been accomplished by combustion in the earth." And if, as the Bishop of Lincoln seems to assume, it is impossible for God to raise up the bodies of those who have been burned, what, it is asked, is to become of the many of the noble army of martyrs who were burned at the stake, or devoured by lions and tigers in the arena, or broiled on beds of iron, rather than renounce their holy faith. Does the Bishop really mean to say that there is to be no resurrection of the bodies of Archbishop Cranmer and Bishops Latimer and Ridley who went to heaven in chariots of fire. The Bishop of Manchester, referring to the consecration of a cemetery, said in 1880: "I feel convinced that very soon we shall have to face the problem how to bury the dead out of sight with safety to the living. I hold that the earth was made for the living and not for the dead. No intelligent faith can suppose that any Christian doctrine can be affected by the manner in which, or the time in which, this mortal body crumbles into dust and sees corruption. The question must be met, for cemeteries are becoming not only a difficulty and a great expense, but an actual danger." A Roman Catholic clergyman remarks: "As to the religious aspect of the question, nothing can be more reverent than this mode of disposing of the dead, and the words of the funeral service, 'ashes to ashes,' will possess a reality they never did before; also the beautiful anthem, 'When thou passest through the fire I will be with thee, would find a most touching response."

Canon Liddon said, in a sermon at St. Paul's Cathedral, "The resurrection of a body from its ashes is not a greater miracle than the resurrection of an unburnt body. Each must be purely miraculous."

The medico-legal objection that is strongly urged against cremation is that by the process of incineration all evidences of crime in case of poisoning would be lost. This is certainly a forcible argument against cremation. But, even when the body is not destroyed by fire, vegetable poisons, if administered, are not always discovered by analysis, and are with difficulty detected after death, especially if the body has lain in the grave for any length of time.

Speaking of the mineral poisons, Dr. W. H. Curtis remarks: "Of this class, very rarely are more than two or three used with criminal intent, and these, particularly arsenic, present such plain and unmistakable ante-mortem phenomena as to render the necessity for the disinterment of the body an act of gross carelessness."

Dr. Selmi, the renowned Italian chemist, has shown by protracted experiment, and his results have been confirmed by other investigators, that the common constituents of the body, as the brain, blood, fibrin, etc., perfectly innocuous in health, are rapidly converted by decompo-

sition, under certain conditions of heat and moisture, into deadly poisons similar to the vegetable alkaloids and just as virulent.

Professor Selmi first suggested, in 1875, the name *ptomaines* to designate these cadaveric alkaloids obtained from putrefying organic material. As the ptomaines are true alkaloids, and as such are members of the same chemical group as the vegetable alkaloids, the possibility that one of the former may be mistaken for one of the latter in a chemico-legal examination is obvious. Such errors have actually occurred beyond the shadow of a doubt. Three such cases are well known. Time will only allow allusion to one. General Gibbone died in Rome under circumstances which awakened a suspicion of poisoning. The chemists who analyzed portions of the body after death were of the opinion that death was caused by *delphinine*, an alkaloid of stavesacre. Selmi saved the prisoner from the sentence of death by proving to the satisfaction of the tribunal that the alkaloid obtained from the body of the deceased did not respond to several of the reactions of *delphinine*, that it was not that alkaloid, but a ptomaine. Professor Thompson, an expert in chemistry, says: "As to the difficulty about post-mortem evidences of criminal poisoning, it has been evident in recent times that such evidence, however obtained, has not had much weight with juries since they are aware of the liabilities to inaccuracies and uncertainties."

The medico-legal objection to cremation might be further met by a revision of the laws governing the appointment of coroner. At present the investigation of cases where sudden or suspicious death has occurred is sometimes seriously handicapped by the fact that the important office of coroner is often vested in the hands of men, frequently laymen, who are not qualified for such duty.

Undertakers now generally use an embalming solution for the temporary preservation of the body. Arsenic, corrosive sublimate, and other deadly poisons enter into the composition of the solution. In case of suspected poisoning, say by arsenic, if the body had previously been injected by the so-called embalming fluid, the subsequent analysis would be attended with well-nigh insurmountable difficulties. An earlier poisoning could not be distinguished with certainty from that effected by the injection used by the undertaker.

We are now living in a practical age, when the question of economy is an important one, and in times when by touching a man's pocket we come in contact with a very sensitive portion of his organization. It is universally conceded that there is useless and extravagant display on funeral occasions. Every year sees families in New York, Brooklyn, and elsewhere, homeless and breadless because of the enormous and unnecessary expense incurred in burying the dead. An

evening paper not long since informed its readers that "A millionaire pill doctor named Henry Hillen was buried at Wilmington, Mass., in a \$10,000 coffin which it took two years to make. There was a \$10,000 box to enclose the coffin, the total expenses of the funeral reaching nearly \$25,000." And further that "Mrs. Hillen, widow of the Wilmington, Mass., pill maker, goes to her husband's tomb every day, leaves a bunch of flowers, asks the corpse how he passed the night, and pays a man \$5 a day for visiting the tomb at evening and crying, 'Good night, Dr. Hillen; we hope you will rest well.' She frequently 'tries on' her own coffin, which, like her husband's, cost \$10,000; but when at the pill works she is said to be 'all business'."

Careful statistics show that the sums expended for funerals in this country exceed all the product of our gold and silver mines, and by actual computation they exceed the amount of all the failures of the business houses of the country. The waste of land is well worthy of consideration. The cemeteries surrounding cities embrace many acres of valuable land. They are all, by law, exempt from taxation. Property in the vicinity of these cemeteries is depreciating and taxes are increasing. Gravediggers, tombstone-cutters, florists, and saloon-keepers are the principal parties attracted to such localities. The cemeteries at Newtown, L. I., cover a very large territory. They contain more than 3,500,000 human remains, and receive annually 30,000 bodies of people dying in New York and Brooklyn.

One principal feature in cremation, looking at it from an economical standpoint, is its cheapness as compared with interment in cemeteries. The average cost of burial lots in Woodlawn and Greenwood, each containing space for six graves, is about \$450, or \$75 per grave. The cost of single graves in the public lots is about \$25 each. The cost of a modest head and foot stone and their erection will add \$75 more, making a total of \$250 or \$300. Assuming the carriage hire to be the same in either case, the cost of cremation decorously performed, including the case in which the body is carried to the crematorium, should not exceed \$40; add \$5 for a terra-cotta urn and \$10 for a niche in the columbarium, and \$5 for an inscribed tablet under the niche, and we have \$60 as against \$250 or \$300 for earth burial.

Embalming is the process of preserving animal bodies from decomposition by introducing antiseptic substances into the spaces left vacant by the removal of the internal parts. This art was extensively practiced by the ancient Egyptians, Assyrians, and Persians. It was carried to the highest point of perfection by the Egyptians. The mummies found at this day in sepulchres where they had lain for over three thousand years, testify to the completeness of the method reached in those early days. It has been estimated that more than 400,000,000



human mummies were made in Egypt from the beginning of the art of embalming until its discontinuance in the seventh century. Herodotus and Diodorus agree in the statement that there were three grades of embalming. The first cost, in our money, was about \$1,225, the second about \$375, and the third was very cheap.

The process of embalming a mummy of the first class is thus described: The brain was first removed, partly by a hook inserted through the nose causing destruction of the ethmoid bone, and partly by subsequent injection of water. The organs of the abdomen and breast were removed through an opening, about three inches long, in the left hypogastrium. The thoracic and abdominal cavities were filled with the purest bruised myrrh, cassia, and other aromatics except frankincense. ("The spicery and balm and myrrh," mentioned in Genesis, as carried by the Ishmaelites to Egypt, were principally for the use of the embalmers.) The body was afterwards put in natrum, which is not our nitre, but subcarbonate of soda. This salt was found in abundance at the natron lakes in the Lybian desert. The body was left in the natrum from thirty to seventy days, after which it was removed, carefully washed, and enveloped in bandages of fine linen cloth held together by gum. When thus prepared it was returned to the family. The embalming of a mummy of the second class was simpler. A substance obtained by distilling cedar wood, containing among other things carbolic acid (perhaps the first time it was used as an antiseptic), was injected through the rectum into the body and allowed to remain there while the body lay the usual time in the soda salt (*Mead*). The third mode was customary among the poor. The bodies were pickled for a number of days and then boiled in bitumen. These mummies are devoid of hair and eyebrows, are black, dry, heavy, and very hard to break.

Combustion is the means that Nature employs for the destruction of the dead body. It may be prolonged for an indefinite period in the grave. In the retort of the crematorium or the funeral pyre the body is reduced to its constituent elements in a few hours. The final result is the same in each case. The difference lies in the time in which the result takes place. In cremation the end is attained in an hour without any injurious consequences to the living; in earth burial, in an eighth, quarter, or half a century, with more or less menace to health.

In earth burial the length of time necessary to effect complete decomposition varies according to the character of the ground. It may be accepted as a rule that in favorable soils, porous and well aerated, decomposition will be fully accomplished in from three to four years: and in soils, dense, clayey, or wet, the putrefactive process

may be delayed from ten to fifteen years or longer. The remains of the young decompose with greater rapidity than those more advanced in life, those of females more rapidly than of males, and those dying in full health than those whose tissues are wasted by disease. Persons dying from diseases of a malignant nature, or where the fluids were in a depraved condition, decompose with still greater rapidity. When decomposition takes place the parts become soft, change in color, exhale a disgusting odor, diminish in weight, and afford several products, some of which escape in gaseous form, others pass off in a liquid state, and others again are contained in a fatty or earthy residuum."

Sir Henry Thompson said in 1874: "No dead body is ever placed in the soil without polluting the earth, the air, and the water above and around it." The late Disraeli said, in the House of Lords in 1880: "What is called 'God's acre' is not adapted to the time in which we live, nor to the spirit of the age. The graveyard is an institution very prejudicial to the public health, and the health of the people ought to be one of the first considerations of a statesman. The time has arrived when a safer method for the disposal of the dead should be instituted."

Dr. Buck, in his work on Hygiene, remarks: "It is impossible for any one to say how long the *materies morbi* may continue to live underground. If organic matter can be boiled or frozen without losing its vitality, and seeds three thousand years old will sprout when planted, it would be hardihood to assert that the poison of cholera, or small-pox, or typhus may not for years lie dormant, but not dead, in the moist temperature of the grave." Dr. Parkes said: "If the dead are buried, so great at last is the accumulation of bodies that the whole country round a great city becomes gradually a vast cemetery. After death the buried body returns to its elements: if, instead of being buried, the body is burned, the same process occurs more rapidly. Neither affection nor religion can be outraged by any manner of disposal of the dead which is done with proper solemnity and respect to the earthly dwelling places of our friends. Burying in the ground appears certainly to be the most insanitary plan." Dr. Spencer Wells writes: "When the people know how great are the evils dependent on burial in the earth, even when this is done under the most favorable conditions, public sentiment must favor cremation in place of corruption, and for putrefaction substitute purification." Dr. A. N. Bell says: "Cremation commends itself to many of the foremost sanitarians, church dignitaries, and others distinguished for their intelligence in the most enlightened communities of the present day everywhere."

The Report of a Committee of the American Public Health Associ-

ation, read at St. Louis, May, 1886, Dr. James M. Kellar of Arkansas, chairman, states: "We believe that the horrid practice of earth burial does more to propagate the germs of disease and death and to spread desolation and pestilence over the human race than does all man's ingenuity and ignorance in every custom or habit. The graveyard must be abandoned. The time has come for us to face squarely the problem how to dispose of the dead with safety to the living. And your committee has an abiding faith that you will earnestly and at once say that the earth was made for the living and not for the dead, and that pure air, pure water, and pure soil are absolutely necessary for perfect health. Only skeptics deny that the dead do poison these three essentials of human life."

It has been ascertained that the plague which broke out in Modena in 1828 was caused by excavations made in the ground where three hundred years before victims of the plague had been buried. A similar occurrence took place a few years ago in Derbyshire, England, and the terrible violence of the cholera in London in 1854 was charged to the upturning of the soil wherein the plague-stricken of 1665 were buried. In 1806 the New York Board of Health advised the removal of all graveyards within the city limits, and recommended that the then existing burial places be converted into public parks. This was done to some extent, and Washington Square, which was then the "Potter's Field" of New York, is one of the fruits of this recommendation. A physician who lived several years on its western border declares it impossible to raise children on the ground floor of houses in that vicinity.

In the Report of the Committee on Hygiene, read before the Medical Society of the County of New York, June 25, 1886, are enumerated the many sources of pollution of the water supply of New York City found to exist in the Croton Valley watershed. Among them are five cemeteries.

Dr. A. N. Bell, speaking of these last-named burial places, remarks: "An enormous mass of putrefying human remains has evidently accumulated in the five cemeteries referred to, and this is constantly being replenished by not less than four hundred dead bodies annually—and all the excretions and soakage of this loathsome mass of putrefactive material is drained into the Croton! And this, let it be borne in mind, is not surface pollution, or that which is or which can easily be, by common consent, collected and cremated, or purified by combined irrigation and filtration. It is carefully placed beyond these resources, as it is also beyond the most effectual resources of Dame Nature. Deep enough in the earth to be out of the effectual influence of the sun's rays, and, as if



by intent, within the most facile scope of the subsoil currents to take up all that is, and as rapidly as it may be soluble, and convey it to the potable supply."

Dr. Bell, having heard that a "hearing" was in progress before the Aqueduct Commissioners of those opposed to the construction of the Quaker Bridge Dam on economic and sanitary principles, says: "We attended the hearing, and imagine our astonishment when, among others, the chief means urged for obtaining an abundant water-supply was to dam the Bronx below Woodlawn Cemetery! This project would conserve the seepage of many thousand human remains daily accumulating, the waste and excreta of about 50,000 people, the drainage of numerous factories,—but why enumerate? The first condition named will surely suffice. No amount of dilution of such graveyard pollution—to say nothing of the rest, as that which even now the Croton water contains—can satisfy the public demand in the face of patent knowledge such as this. There may be chemists who, because they cannot find traces of such impurities as those referred to, deny their existence and claim that the purifying effect of a mass of water thus polluted restores all such matter to its original elements. But the everywhere asserted evidence of prevailing diseases in all communities which use such water is abundantly sufficient to rebut all such mere laboratory researches."

A late report of the New York State Board of Health says: "The fact is abundantly proved that the noxious qualities of polluted water are not removed by a flow of many miles in an open channel. Even though the water may have become thoroughly clarified by the complete sedimentation of the solids originally held in suspension; and hence, also, that any stream which is defiled with putrescent animal matter, especially such as is derived from human beings, cannot safely be employed as a source of potable water-supply. Both chemical and biological analysis may utterly fail to discover in the water the matter which carries the deadly seeds of epidemic."

On investigating the cause of the outbreak of typhoid fever at Plymouth, Pa., some years ago, it was found that "one of the public water-supplies contained a much greater amount of organic matter than the other, but it was the water chemically purest which carried disease and death." "Modern science has shown that the *quantity* of putrescible nitrogenous matter in water is not the most important thing, but that the *CHARACTER* of the matter is the vital point; and since no practicable method has yet been developed of determining, either by chemistry or the microscope, the pathogenic character of the matter contained in large bodies of water, owing to the minuteness of the quantity which may be harmful and its extreme diffusion, we are as

yet generally left to deal with indications and probabilities in forming conclusions as to large bodies of water like lakes and important streams."

In the strata of air lying in a prolonged calm above a cemetery, Professor Selmi, of Bologna, discovered an organic corpuscle which poisons the atmosphere to the detriment of the living economy, and which, when injected under the skin of a pigeon, caused a typhus-like disease that ended in death in three days. Dr. Domingo Freire, of Rio Janeiro, asserts that, while investigating the causes of a recent epidemic of yellow fever, he discovered the significant fact that the soil of the cemeteries in which the victims of the outbreak were buried was positively alive with microbial organisms exactly identical with those found in the vomit and blood of those who had died of the disease. Some of this soil was dried, and then placed in a cage with a guinea-pig. Previous to the introduction of the earth, the blood of the animal was examined microscopically and found to contain no bacteria of any kind. The animal became ill and died within a few days. When its tissues were examined after death, they were found to present all the characteristic changes which yellow fever brings about. It is now known that earth-worms are capable of bringing to the surface from the grave myriads of bacilli and bacteria which modern science has shown to be the vital principle (or rather the deadly principle) of all forms of zymotic disease.

The recent researches of Pasteur into the cause of an outbreak of charbon have thrown much light on the etiology of that disease. "A sheep which had died of charbon (or anthrax) was buried at the depth of twenty feet in the ground, in a field which, for ten or twelve years after, ceased to be used as a pasture-ground. After that length of time some healthy sheep were pastured in that field; soon after, three sheep were taken ill and died of charbon, at a time when the disease did not exist in that locality or environs. Upon diligent investigation it was found that the animal affected with charbon, and which had been buried twenty feet deep ten years before, was the cause of this new breaking out of the disease. Pasteur demonstrated that the germs of the disease were brought to the surface by earth-worms."

These specific germs lying latent for ten years were not destroyed by that length of time, but still retained all their vitality and were ready to germinate and propagate disease on the first favorable opportunity.

In the *Chicago Medical Examiner* of August, 1874, appeared the following extract from the *Medical Gazette* of Paris: "In the last remarkable report of the Faculty of Medicine of Saxé, Reinhard relates that nine large and several smaller victims of the cattle plague were

interred at Dresden at a depth of ten or twelve feet. It was found the next year that the water from a well situated one hundred feet from the pit in which the cattle were buried had a fetid odor and contained butyrate of lime. At a distance of twenty feet it had the disgusting taste of butyric acid, and each quart contained about thirty grains of this substance. The bodies were subsequently disinterred and burned."

If earth burial be so innocuous and the products of the grave so harmless as many assert, it is strange that in all well-organized communities strict sanitary ordinances are found essential for the management of cemeteries.

The possibility of the pollution of potable water is shown by the enactment of stringent laws regulating the opening of wells in the vicinity of burial places. The planting of trees in cemeteries to absorb the gases evolved, and the construction of belts of woodland to act as barriers to the escape of noxious vapors, are strongly advocated by many sanitarians. These and other hygienic requirements would hardly be rendered necessary if cemeteries were not considered to be centres of contamination and foci of infection.

Time will not permit extended reference to entombment. The monument erected by Artemisia to the memory of Mausolus, the mausoleum of Hadrian, now the castle of St. Angelo, and the pyramids, have been tombs and the wonder of ages.

Viewing the practice of tomb burial in a sanitary light, an authority says the danger of "the placing of dead bodies in tombs and vaults is far greater than burial in the ground. The earth, doubtless, does absorb and decompose into harmless products a portion of the deleterious products of decomposition; in tomb and vault burial these products are confined and allowed to escape *en masse* on every opening of the vault, or, in the more improved (?) vaults, are allowed constant egress through so-called ventilators." This statement, though plausible, is not entirely correct, as Dr. A. N. Bell clearly shows in an editorial in the *Sanitarian* for January, 1889, with special reference to the Brooklyn water-supply, that the dead bodies are *not* exposed to the action of the earth until long subsequent to the access of the subsoil water, the practice of interment everywhere being to so encase the bodies as to protect them from contact with the earth. The coffins and caskets in general use retard instead of hastening the decomposition of the body. In England, burial in the solid coffin is regarded by many as a source of danger, and, as a result, the use of the "earth to earth" casket is vigorously advocated. This coffin is constructed of perishable material, such as papier-mache or wickerwork.

There remains one other method of preserving the body that is well worthy of notice, and that has not received the attention that its



importance demands. It is the desiccation of the remains. Long before the Spanish conquest the Peruvians were adepts in this mode of preserving the dead. The bodies of the Incas, and their queens and countless numbers of their subjects, testify to this. The interesting question is often asked whether the ancient Peruvians embalmed their corpses or whether the bodies owe their good preservation to the influence of the climate which is so conducive to mummification. Señor Rivero, the director of the National Museum at Lima, having examined hundreds of mummies, was unable to find any preservative substance in them. It is true that in the skulls a brown or blackish mass, in dust or small pieces, has been found, but a chemical and microscopical analysis has proved that the dust and the pieces were composed of cerebral fat and globules of dried blood. All the mummies contain the brain and intestines, and in none of them could Rivero discover any incision which would have been necessary for evisceration had the bodies been subject to embalment. In the mummy of a child found by Dr. Von Schudi, and which is now in the Imperial Academy of St. Petersburg, the ribs of the left side were detached from the sternum, exposing the thoracic and part of the abdominal cavities, plainly showing the heart, with the pericardium, the shrivelled lungs, the diaphragm, the transverse colon, and portion of the small intestines. These facts prove that the Peruvians did not have recourse in the preservation of the dead to any elaborate process of embalming as customary among the Egyptians. The bodies were simply dessicated by exposure to the air. The heated soil and calcined sand on the coast dried the corpse, and the pure cold air and dry winds of the interior did the same thing.

In Peru the animals that drop by the wayside will be found at the end of months entire, not corrupted, but dried. On the highway from Arequipa to Lima a number of the mummified animals are to be seen, and which serve as landmarks to indicate the road when the wind covers it with sand. The climatic conditions of the imperial city of Cuzco are very favorable to the desiccating process. Here, in the great temple of the Sun, the remains of the Incas have been discovered in a marvellous and life-like condition. Cuzco, the most ancient city of Peru, has an elevation of 11,380 feet above the sea. Surrounded by lofty and snowclad mountains, it might be supposed to possess a cold, not to say frigid, climate; but its temperature, though cool, is seldom freezing. In what is called the winter season, from May to November, the pastures and fields are dry and withered, more from drought than from frost.

La Casas describes the Peruvian burial rites, as follows: "The dead are wrapped in the skin of the llama, then clothed and deposited

in a sitting posture. The doors of the tombs, which are all toward the east, are then closed with stone or clay. At the end of a year, when the body becomes dry, the doors are again opened. There is no bad odor, because the skins in which the bodies are placed are sewn up very closely, and from the cold they soon become mummies."

Travelers in Africa have found bodies of camels, which had evidently died of fatigue in the desert, to be so dried and preserved by the heat of the sun that no evidences of post-mortem decay were discovered. The atmosphere of our Northwest Territories is, in some places, so dry that the snows of winter pass off from the ground without leaving it wet, and mummified buffalo have been found on the plains of Colorado. When freshly killed meat is subjected to a dry summer heat, it is rapidly converted into the well-known *jerked beef* of the plains. Dried apples, peaches, and other fruits are familiar examples to every house-keeper of desiccated vegetable matter. This method of preservation is as widely known as it is primitive, and clearly indicates that absence of moisture prevents decomposition of organic material, or, in other words, desiccation takes the place of putrefaction.

Dr. G. Bayles, of Orange, N. J., in 1874, brought before the Public Health Association the method of disposal of the dead by desiccation. He tersely remarks: "I can hardly conceive it necessary, therefore, in presenting the subject, to centre all our thoughts and experimental operations upon one method, and that a reduction solely by means of fire. Has modern chemistry no other resources? Have our electrol-ogists no practical ideas to present, drawn from their magazine of power? Why may there not be a system of thorough desiccation? The desert sands have buried and desiccated many thousands of unfortunate travelers, as well as their camels. We have an unbroken and reliable chain of evidence, sufficient in itself to establish the fact that by excluding moisture and guarding against excessive changes of temperature we can effect desiccation upon *whole* bodies, and that they would continue entire and inoffensive for a length of time which we cannot measure."

The seed sown by Dr. Bayles fifteen years ago did not fall upon stony ground, as to-day it is bringing forth fruit. The desiccating method, as a proper means for the disposal of the dead, is now engaging the attention of many sanitarians and scientists, and in due time will be presented for public attention and investigation. In this process, as now conducted, the corpse is placed in a chamber constructed with pipes so arranged as to bring fresh dry air into them and conduct it through the casket, and by forced draughts through a central furnace, where all the gases and fluids taken from the body are consumed. The air-current is sufficiently rapid to make an entire

change in the space every two seconds. When desiccation begins, the chamber containing the body is hermetically sealed, except as respects the inlet and outlet passages for air, which are closed when the process is completed. It is intended to deposit the desiccated remains in mausoleums which are to be constructed with a view to durability of material, beauty of design, and protection from ghouls. The desiccating method has for its basis the fact that in all animal tissue water is present in greater or less proportion, forming about two-thirds of the weight of the whole body. A man weighing 165 lbs., if completely dried, would therefore lose about 110 lbs. from the evaporation of water. An opportunity was lately afforded me of inspecting and examining the body of a man undergoing the process of desiccation. The remains lay in a glass-covered metallic case, having been placed therein about nine months ago, and at that time weighed 160 or 170 lbs. Judging by the dried-up appearance of the body, I presume that to-day it does not weigh over 60 lbs. The muscles of the trunk, and especially of the extremities, are shrunk and hard. The integument is dry and feels leathery to the touch. The countenance looks natural. There is no discoloration of the cuticle and no evidence of any decomposition. A current of ordinary air is admitted to the casket at one end, it freely circulates around the body, and escapes through a tube, placed at the other end, into a chimney or furnace through which all the volatile products pass before mingling with the atmosphere.

The desiccating process has many commendable features. It complies with all the sanitary requirements, and meets the medico-legal demand that the evidence of crime shall not be destroyed. The rapid abstraction of moisture by this method will do away with the factors in the production of ptomaines which might vitiate the result of a chemico-legal examination. This system is devoid of everything that can shock sensitive minds or offend refined tastes. It does not conflict with the widespread and deep-seated reverence felt for the remains of the dead. The mass of mankind looks not only with aversion but with feelings akin to horror on any process that aims at the immediate destruction of the body. This may be all sentiment; nevertheless no amount of specious reasoning can readily or easily overcome the tender and universal deference for the beloved departed, for it is woven into the very warp and woof of the human heart, and has the religion, the tradition, and the custom of centuries associated with it.

In conclusion, it is well to remember that various important discoveries and many new ideas of science have been ridiculed, declared preposterous, and bitterly opposed. When Benjamin Franklin made the discovery of the identity of lightning and electricity, it was sneered at, and people asked, "Of what use is it?" Dr. Peter Barlow, a dis-



tinguished scientist, declared the impracticability of the electric telegraph. Sir Humphrey Davy argued against the use of illuminating gas as a project without scientific value or even possibility. The discovery of the circulation of the blood by Harvey was received with derision as the utterance of a cracked-brain impostor. When Jenner introduced and established the practice of vaccination as a protection against small pox, the medical profession, at first, refused to make trial of his process. He was accused of attempting to bestialize his species by inoculating the human system with diseased matter from a cow's udder. Vaccination was denounced from the pulpit as being diabolical, and the most monstrous statements regarding its effects were disseminated and believed.

With these examples in view, it is evident that the introduction of any change in the present method of the disposal of the dead will naturally encounter suspicion, criticism, and opposition, except in the case of the method of desiccation, which seems to have been received, so far as presented, with marked favor.

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During the discussion of Dr. Peacocke's paper, Dr. A. N. Bell, the editor of the *Sanitarian*, said:—Mr. Chairman and members of the Kings County Medical Society: I cannot very well decline your invitation to say a few words on this subject, after hearing a paper remarkable for its comprehension and excellence, and the kindly allusions which the author has been pleased to make to some of my writings on the subject. I have heard a good many papers read on the disposal of the dead within the last fifteen or twenty years, and I am quite sure that the one which has just been read is the most complete of them all, possibly because the writer has had before him the greatest amount of modern literature upon the subject.

Permit me to say, however, that I never hear a paper read on the disposal of the dead, but what there is excited in me some of the same sentimental emotions of honoring the dead that seem to have maintained a practice which is chiefly remarkable from the fact that it has only in recent years taken into consideration the protection of the living.

Honoring the dead without regard to the living appears to have been the prevailing sentiment in all time. To honoring the dead we owe the greatest monuments of architecture that exist to-day. To honoring the dead we have some of the finest landscapes and beautifully selected green spots and green trees in the world. Right here in our midst are growing up beautiful cemeteries in honor of the dead; and great shafts and monuments are erected in honor of the dead comparable with the monuments of Egypt erected thousands of years ago.

But the honoring of the dead to the sacrifice of the living, as there is too much reason to believe is practiced in our day, is an appalling question. In the course of my life I have seen the honoring of the dead (in Africa) by placing the dead body upon a scaffold for the birds to eat, while the relatives have gathered food around that the spirit may have something to live upon when it takes its flight, and the bleached bones, which for a time remain on the scaffold, are returned to their original elements without danger to the living. And this means, surely, is no less in honor of the dead than those which are commonly practiced by civilized peoples and Christians everywhere.

The grave which is excavated is but another means of honoring the dead; and so, too, is the vault that is built in the cemetery or cut out of the side of the mountain,—all are of the same purport. But can we say it is honoring the dead if we put it where it is poisoning the living? Never.

I am not here to speak particularly in favor of cremation or any other means for the disposal of the dead, but to give utterance to one single sentiment, to *so dispose of the dead that it shall not endanger the life of the living*. Are our skirts all clear in this particular? Have we carefully considered the subject in all of its bearings? It has given me serious thought; and when I consider cases like one that has been recently reported, I am filled with horror at the suggestions which it awakens.

At a meeting of a cremation society in Glasgow, a few months ago, Sir Spencer Wells cited the case of a churchyard, near Yorkshire, where the bodies of people who died of scarlet fever had been buried thirty years before. A part of the churchyard was closed, but it was afterwards included in the garden of the rector, who had it dug up, and in consequence of this the scarlet fever from which those people

had died thirty years before broke out in the family of that clergyman and spread to the surrounding houses.

We all know or have read of instances of certain death from the poisonous gases that emanate from the soil where human dead bodies have been buried, and all such gases are well known to be absorbable by water, to say nothing of the disease germs which they float.

But if these gases and germs are pent up in air-tight caskets under ground, how long they will remain dangerous, and yet at all times subject to the loosening of their confines and gaining access to the water courses, none of us know.

The author of the paper has alluded to the grains of wheat found in the wrappings of mummies. It is well known that some of these have been planted and grown, and given name to a species of wheat that is cultivated now in all wheat-growing countries, called "mummy wheat." This germ or seedling wheat was not less than three thousand years old. How much longer than three thousand years it might have remained in the mummy cloth and still have lived and bloomed under congenial conditions, may well be asked of those, in answer to the question. "How long do you suppose a disease germ would live?" I know of no reason why it would not live just as long as a grain of wheat would live, if placed under like favorable conditions.

Some time ago I read—I cannot now recall just where—that among the Mohammedans, in their way of honoring the most distinguished of their dead, they have mausoleums under or in connection with their mosques, where they stow away the bodies in state, as it were, something after the manner suggested in the concluding portion of the paper to which we have listened. And we understand there is a proposition now on foot, a company formed in New York, which proposes to build grand mausoleums in connection with or independent of the cemeteries, as the case may be, where the sentiments of certain people can be gratified, if they do not wish to bury their dead, or are prohibited, as they certainly should be in many cases from burying them so as to endanger the living, and are unwilling to have them cremated. I mention this only as one of the means of disposing of the dead without danger to the living, because it overcomes the objection which touches the sentimental emotions of individuals who think cremation lacking in sacredness, and too rapidly destructive. They fail to recognize the ultimate issue, that naught but ashes finally remain under the tomb, and that it can be erected over those which result from cremation with more enduring certainty than the grave, or the ashes can be taken care of as proposed by many other devices. But the new mausoleum process fully meets this sentiment, while it also overcomes the medico-legal objections urged against cremation, and, like it, effectually disposes of the dead without danger to the living.





